

Coffee, Bamboo, Cassava, Green Energy and Smartvillage Towards Sustainable Development



In Indonesia, the majority of the Indonesian people believe sustainable development should start from rural areas, where resources such as coffee, bamboo and cassava are abundance and can be utilised together with green energy and building of 'Smartvillages'.

The paper draws on a range of examples in which the author has been involved for more than 14 years in building networks with local governments, national governments in Indonesia as well as Australian government to generate an interest and funding opportunities for creating a green-based economy in line with the inspiration from clean energy Indonesia.



It start in 2003, when the author after setting up Wirasoft Consulting company in 2002, build the "first" Smartvillage in Semarang, Central Java Indonesia as depicted in the above picture. Unfortunately, due to lack of business experiences, the endeavor has failed. Not until the call in Los Angeles, USA for Diaspora to unite by Dr. Dino Patti Djalal, the former Indonesian Ambassador to the United States in 2012, the effort of Smartvillage in Indonesia has been revived and last year, the first Kampung IT (or Smartvillage) has been established in Kediri, East Java in collaboration with the businesses and local government.

Since the establishment of the first Indonesian Diaspora Network in 2013 in Australia, the author has been actively supporting the organisation and served as the President of the Indonesian Diaspora Network (IDN) in the state of New South Wales (NSW), Australia until 2017 and due to many tangible results have been achieved in Australia and Indonesia, the author has been elected globally as the Vice President for Australia and Oceania from 2015 until 2017. One of the arguable tangible result is the joint research between universities in Indonesia and Australia leads by Prof Janet McIntyre from Flinders.

As the President of Diaspora in NSW, the author has achieved in promoting Australia to Indonesia, for example the Smart Cattle Tracking System (SCTS), developed by Wirasoft in Australia in response to the call by the former President of Indonesia, Dr Susilo Bambang Yudhoyono for the Indonesian Meat Self sufficiency. SCTS is currently under discussion to be further developed in Kampung IT under the supervisor of Prof Muladno, former Indonesian Director General of Animal Husbandry and Animal Health at the Ministry of Agriculture and Professor of Animal Breeding and Genetics at Bogor Agricultural Institute (IPB) to manage the strategic policy in the construction of 54 People Ranch Schools as depicted below.



For Indonesia to Australia, the author has promoted the commodity such as Indonesian coffee with the assistant of the Consulate General of the Republic of Indonesia in New South Wales, Dr. Yayan Ganda Hayat Mulyana and the Indonesian Trade promotion Centre (ITPC), leads by Mr. Agung Haris Setiawan, the ITPC Director.

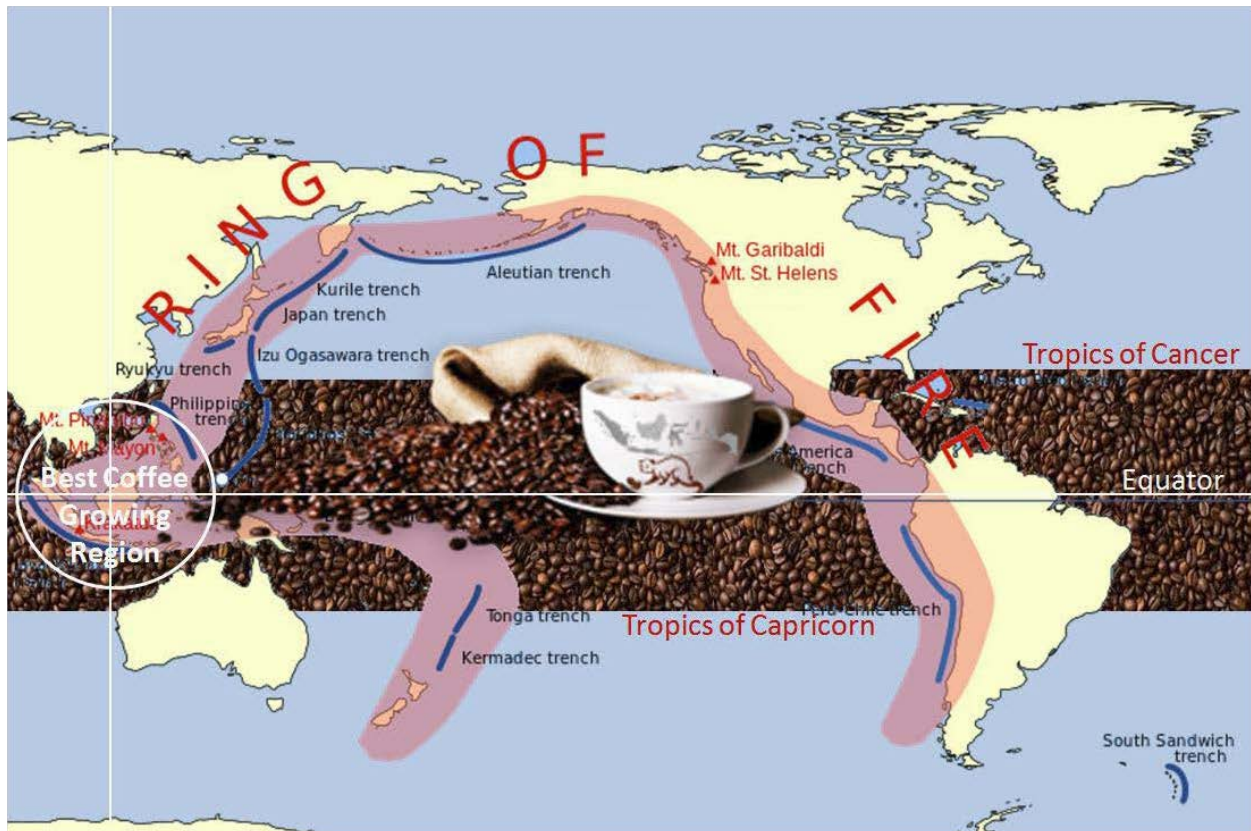
In collaboration with the Australian and Indonesian Coffee Association (AICA) leads by Mr. Toni Marci, a Coffee Q Grader certified under Speciality Coffee Association of America, entered beans originating from West Java into the Melbourne International Coffee Expo ("MICE") roasting competition in March 2017. The West Java Coffee Filter Blend won a Bronze Medal in the "Single Origin Pour Over". This is a tangible example of what can be achieved by promoting Indonesian Coffee on an International stage.

By building 'Smartvillages' across Indonesia, from Sabang to Merauke, through providing free WiFi and green-energy based electricity at cafes, building houses from bamboo and using cassava-based products instead of plastic, it is argued in this paper that we can not only help climate change mitigation efforts, but we can help bring Indonesia's ICT knowledge in line with that of more advanced countries.

In this way although the paper argues that ICT can be brought in line with more advanced countries, it also argues that Indonesian examples can provide lessons for such countries in terms of options for sustainable development in response to climate change.



Indonesia, also known as Nusantara is a contemporary Indonesian term for the Indonesian archipelago. It originated in Old Javanese and literally means "archipelago", was the fourth largest producer of coffee in the world since 2014. Coffee in Indonesia begun with its colonial history, when the Dutch governor in Malabar (India) sent a Yemeni or Arabica coffee (*Coffea Arabica*) seedling to the Dutch governor of Batavia (now Jakarta) in 1696, and play an important part in the growth of the country. Indonesia is located with an ideal geography for coffee plantations, near the equator and with numerous mountain regions across the islands, creating well suited micro climate for the growth and production of coffee.



Surrounding by the Ring of Fire, Indonesia's 3,200-mile (ca 5,150Km) archipelago with 17,000 islands, 120 active volcanoes, ample rainfall, fertile soil, and ideal temperatures have led to the existence of a variety of coffees.

A coffee plant prefers rich soil and mild temperatures, with lots of rain and shaded sun. It grows best in a band around the middle of the world, bounded by the Tropics of Capricorn and Cancer, known as the Bean Belt. Soil, climate and altitude affect the flavor of the beans. Indonesia is the only country in the world that is crossed between the Ring of Fire and the Bean Belt. Therefore Indonesian's coffee has a very unique taste.

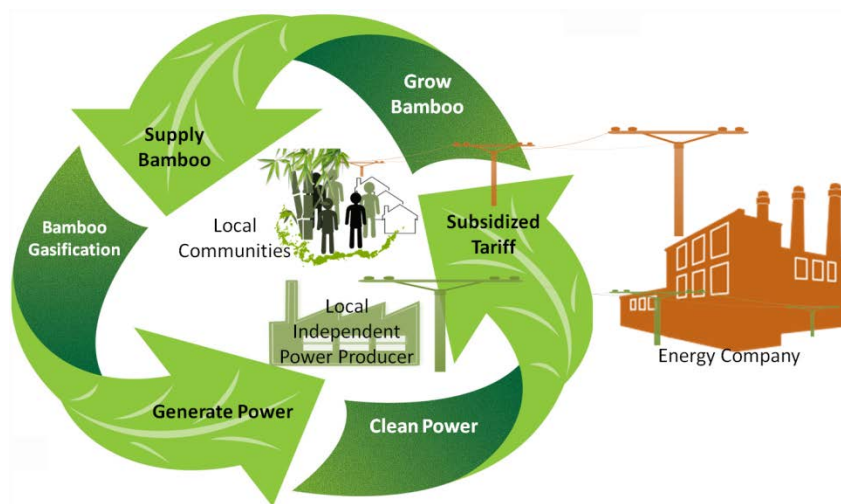
Specialty Arabica coffee is Indonesia's most popularly exported product and has gained worldwide acknowledgment. This has positioned Indonesia as the 2nd largest specialty Arabica exporter in the world, with 150,000 tons of export per year. Nearly 100 genetic varieties of Arabica coffee have been created since 1699 - some of these include Sumatra Lintong, Sumatra Kerinci, Sumatra Solok Minang, Java Preanger, Java Ijen Raung, Java Estate, Sulawesi Toraja, Papua Wamena and much more.

Indonesian coffee is all about a journey of exploring and discovering the diverse taste of coffee that the Indonesian archipelago has to offer. Therefore with coffee, bamboo and cassava, we can link them to tourism, culinary and culture of over 300 ethnic groups in Indonesia, which are mostly living in the rural area in harmony.

Bamboo plays a central role in Indonesia's climate change mitigation efforts. The country is strengthening the capacity of local communities so they can get the most from this valuable resource. The picture below depicted one of many Cafes made from bamboo material for people to meet, while enjoying local culinary and high quality coffee bean found all over Indonesia with free Wi-Fi and free electricity.



The following diagram depicted the production of electricity in collaboration between the local communities participation in growing and supplying bamboos to the local independent power producer, which can be found in Mentawai Island, since 2015.



The Mentawai Islands are a chain of about seventy islands and islets approximately 150 kilometres off the western coast of Sumatra in Indonesia. Siberut at 4,030 square kilometres is the largest of the islands and they produce electricity by means of "Gotong Royong (collaboration)". This is a concept of sociality familiar to large part of Indonesia as members of a community in collaboration to achieve a common goal.

The local independent power producer then turning bamboo by means of gasification into electricity and selling it to the energy company, so they can supply electricity to the contributor of the related local community with the subsidized tariff.

In addition to bamboo, cassava can also be used to support towards sustainable development by producing biodegradable products instead of oil based plastic as depicted below:



Further to coffee, cassava and bamboo biomass, the water vertex green energy as found at the Green School's campus in Bali, Indonesia is used to generate electricity energy as depicted in the following picture:



The [Green Schooled in Bali](#) as well as the [Yayasan Bambu Indonesia](#) (Bamboo Foundation Indonesia) can be used as a guidance for setting up Smartvillage (Kampung IT) architecture all over Indonesia from Sabang in northern Sumatra to Merauke in Irian Jaya.



The above picture depicted one of thousand of bamboo houses developed and build by Mr. Jatnika Nanggamiharja from Bamboo Foundation Indonesia, which have been exported worldwide.

To ensure the adequate supply of bamboo, we are colaborating with the Ministry of Environment and Forestry of Indonesia and [Bambu Nusa Verde](#), a biotechnology company specialized in the micropropagation of bamboo species, to cultivate bamboo in Indonesia as depicted below.



The head office and production facilities are located in Yogyakarta, Indonesia.

[The first Kampung IT](#) or Smartvillage has been established in 2017 in Kediri, East Java in collaboration with the Mayor of Kediri, Mr. Abdullah Abu Bakar, KADIN, the Indonesian business chambers and associations in Kediri, the [PGRI University of Kediri](#), the [Polytechnic of Kediri](#) as well as the Bank of Indonesia (BI) branch of Kediri, Bank Jatim Branch of Kediri and the business people of Kediri. The event has been promoted and organized by SANYURI Indonesia.



The above picture depicted the Kediri Mayor Abdullah Abu Bakar opened the Launching of Kampung IT Kota Kediri and the Java Programming Workshop at Kediri Polytechnic 1 Campus, Monday (13/11/2017).

This program is the first time in Indonesia. "I am very happy and very supportive of this program to implement IT village," said Abdullah Abu Bakar on the occasion. He hopes this program will continue and certainly can increase the competence of the programmer especially in Kediri.

"All have been using IT technology. In Kediri City is now using online-based services such as the Voice of Citizens of Kediri (Heaven), about the administration of population, online licensing, UN online, etc. My hope with the IT program is at least the service to the community IT-based ones can be simplified," he added.

The event was attended by the Chairman of Kadin of Kediri-HM. Sholikin, representatives from BI branch Kediri, Bank Jatim Branch Kediri, Chairman of Sanyuri Kota Kediri - Drs. Setyohadi, representative of Diskominfo- Haris Candra Purnam, Director of Polytechnic of Kediri-Drs. , Rector of UNP campus, Cahaya

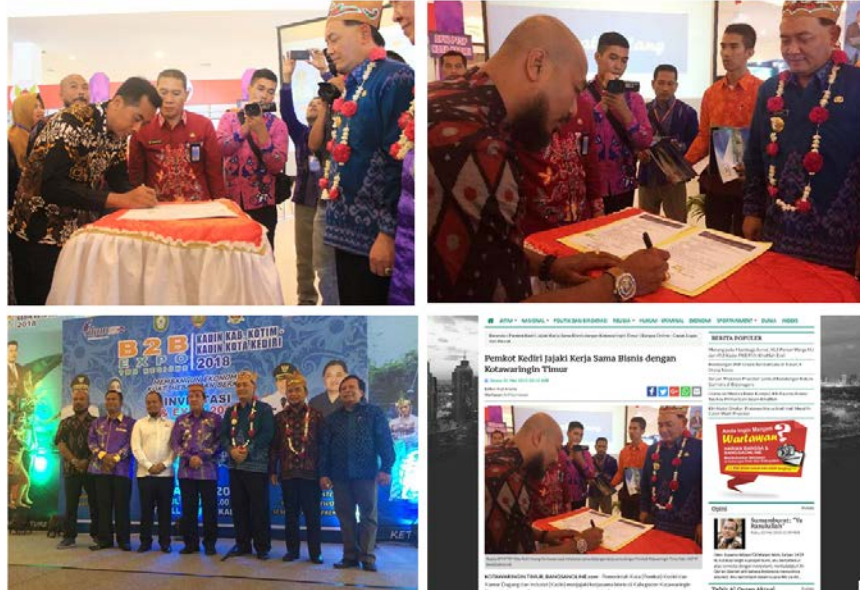
Surya, STMIK, UNIK, and followed by 24 participants including lecturers, students and alumni of Poltek and general public.



The 2 week workshop was held in two sessions. The first on 13-17 November 2017 in Polytech of Kediri and the second was held on 20-25 November 2017 in UNP University of Kediri. In addition, an MoU between Polytech of Kediri and Wirasoft was signed.



As a result of the workshop, Kampung IT (Smartvillage) at Kediri are currently in the position to offer further advanced ICT education as well as IT services to the local communities, government and businesses.



The above picture depicted the Municipal Government of Kediri and the Chamber of Commerce and Industry (KADIN) is exploring business cooperation in Sampit, Central Kalimantan.

Due to the success of the Smartvillage pilot project in Kediri, East Java last year and Smartvillage in Sampit, Central of Kalimantan early this year, we will continue our efforts to set up the third Smartvillage in Alamendah, West Java in collaboration with Dr. Ida Widianingsih from [UNPAD](#) university, Rudolf Wirawan from [Wirasoft](#), Prof. Janet McIntyre from [Flinders](#) university as well as Prof Norma Romm from the University of South Africa ([UNSA](#))



The above picture depicted an International Symposium at UNPAD, West Java on 15-18 December 2017.



After the symposium, we visited Alamendah village in West Java and discuss with the villages about setting up Kampung IT (Smartvillage) in Alamendah in collaboration with UNPAD, Wirasoft, UNSA and Flinders and have been inspired by the potential for empowering local villagers. During the symposium, in conjunction to Smartvillage in Indonesia, Profs. Norma Romm and Janet McIntyre planned to set up Kampung IT in South Africa as well through developing international collaboration to start regional development hubs.

In addition to the above mentioned benefit of bamboo to the environment, the best of all is bamboo can also be crafted to become music instruments. For example Angklung in Indonesia to convey peace and harmony. In Vietnam Đàn T ' Rưng is a traditional bamboo xylophone used in Vietnamese traditional music ensembles representing the music of the highland minorities in Vietnam.

According to Sundanese elders, Angklung tubes symbolize human life; the tubes themselves being the people. The Angklung could not be the instrument that it is, had it only consisted of one tube. This embodies the fact that humans are "social animals," as said by Aristotle, and that they may not live appropriately in isolation. The large and small tubes that are situated next to each other in each instrument represent an individual's growth and capabilities. Different tube sizes signify the truth that all people have different roles to play to create some kind of peace and harmony in this world.



The angklung was first heard inside the UN building in New York on the April 30st 2018 and hundreds of foreign diplomats were amazed to learn and participate in the Indonesian traditional music orchestra.

The concert, titled “Bamboo for Peace: Enchanting Sounds and Rhythms of Indonesia”, was organized in collaboration with the Permanent Mission of the Republic of Indonesia to the UN in New York, aiming to increase the intensity of Indonesia candidacy campaign for UN Security Council non-permanent membership for the term 2019-2020. [Source: The Angklung Reverberation of Peace in the UN Headquarters](#)

To further spread the peace and harmony with bamboo to the world, it would be a dream come true, if before the conference of the Hanoi forum 2018, the Angklung and Đàn T ' Rưng can be performed as a united ensemble to the audience of the conference.



Angklung



Đàn T ' Rưng

In summary, the majority of the Indonesian people believe sustainable development should start from rural areas, where resources such as coffee, bamboo and cassava are abundance and can be utilised together with green energy and building of 'Smartvillages'.

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